BOOK REVIEW

Settlement dynamics of the Middle Palaeolithic and Middle Stone Age

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Here, there, but not quite everywhere

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This is a book whose weaknesses are also its strengths. This seemingly contradictory assessment arises from the broad geographical and chronological scope of the topic. The papers in this edited volume derive from a meeting held in Tübingen (January 1999) of Commission 27 of the International Union of Prehistoric and Protohistoric Societies (UISPP). The Commission was formed specifically as a forum for the discussion of research on Middle Palaeolithic (Eurasian) and Middle Stone Age (African) settlement patterns. This is a strength. Too few opportunities are offered for Europeanists and Africanists to share their data on such a well defined topic as human settlement patterns. The structured use of space on an intra and inter site level, for example, forms part of the "trait list" of behaviours used to chart the development of "modern-like" behaviours among pre-Upper Palaeolithic populations (eg, McBrearty & Brooks 2000). Bringing together such a disparate array of researchers can only but help clarify the similarities and highlight the differences between regional records. The result should be a gradual reformulation of what constitutes modernity and a greater awareness of the mosaic-like pattern of development within and between continents. This stage of enlightenment is something to look forward to, but is sadly not to be found here or anywhere else at the moment. Such a gathering of papers also reveals the differing approaches to common problems of chronology, taphonomy and use of ethnographic analogies. Again, a useful contribution if we are prepared to learn from each other and move the field of settlement research forward. An Africanist and a Europeanist are writing this review in an effort to do just this.

There is a clear European bias to the coverage in this volume (and presumably in the membership of Commission 27). Nineteen of the twenty-seven chapters are devoted to European sites or regions (table 1).[1] Africa, a continent that is three times the size of Europe is covered in five chapters. The archaeological records of south, east, northeast and northwest Africa are each represented by single chapters and these are not regional overviews, but specific studies based on individual sites or limited intersite comparisons. Asia fares less well with only three chapters. Of these, two deal with the Levantine Middle Palaeolithic and the third with China. The inclusion of China seems odd given the lack of unequivocal Middle Palaeolithic technology in east Asia: a review of the Indian Middle Palaeolithic would have been more appropriate and given a greater sense of geographical continuity to the volume. Central and west Africa are not included in this volume

presumably because little in the way of settlement based research has been undertaken in either area. If not, why not? The same question can be asked of the central Asian record. It is still early days for settlement-based studies in regions where issues of chronology and typology remain unresolved and the site is still the unit of analysis. There is even considerable geographic bias within Europe: of the nineteen European papers, eight deal specifically with French sites, three with German, two with Italian, and one paper each for Belgian, Spanish, Portuguese and Crimean sites. One paper is synthetic in scope (Vermeersch on intrasite patterning), but still discusses material only from France, Germany and the United Kingdom. Where is the coverage of northeastern Europe and the Balkans? Even if one contrasts the European coverage in this volume with that in the recently published and similarly biased *Middle Palaeolithic Occupation of Europe* (Roebroeks & Gamble 1999) in a European sense more is omitted than included. This should not necessarily be regarded as a weakness: no statement is made that the contributions to the volume are intended to be representative, and viewing the weakness in spatial coverage across the volume as a strength at least reveals where research efforts should or could be concentrated in the future, or at least what the composition of Commission 27 should be.

The underlying European bias more generally reflects the history of archaeological research in the Old World and the comparatively few fieldworkers currently active in Africa. The editor, who is also president of Commission 27, represents a rare fusion of someone who works in both Europe and Africa. Perhaps this is the future for the field; one in which researchers work across continents and bring fresh perspectives to existing problems.

Methodology

Since the 1960s when settlement pattern analysis became part of processual archaeology, Palaeolithic archaeologists have struggled to work with a difficult database. Whether working in Eurasia or Africa, all who are interested in the spatial dimension of human behaviour face the same challenges of demonstrating contemporaneity between sites, controlling for taphonomic distortions, reconstructing resource availability, estimating group size and length of occupation and of choosing appropriate analogues for interpretation. The Eurasian record poses a particular challenge given that Neanderthals are not modern humans and our ethnographic analogues derive from contemporary hunter-gatherers. Conard offers a useful summary of all these issues and draws particular attention to the assumptions underlying the use of lithic discard patterns to reconstruct activity areas in the landscape. He observes that the ethnographic literature from the Kalahari does not support the implicit assumption often made by archaeologists that place of discard equals place of use. Also challenged is the common and fundamental assumption in settlement studies that artefact density equates with duration of occupation or group size. Conard cautions that large accumulations of lithic and faunal debris can develop rapidly at sites which were used briefly and by few people. The practical constraints on these variables need to be determined for each site or context as no universally applicable correlates or ethnographic models exist. The much used ethnographic model of aggregation and dispersal sites comes to mind (eg, Conkey 1987; Wadley 1987) on which social inferences are drawn for the Upper Palaeolithic and Later Stone Age respectively. Conard makes a plea for "dynamic models where recognizable human agents play a central role" which are based on the variables of "time, space, group size, caloric input and output and resource input and output". The human agent here is the rational, economically driven decision-maker. Overall, it is clear that we still have much to learn about the various scales of settlement activity, as Conard notes, and as is repeated later by Meignen & Brugal.

All the studies in this volume pursue some variant of what Roebrooks and Gamble (1999:8) have termed a "games against nature" approach in which decisions about landscape use and settlement patterns are driven ultimately by

subsistence needs. The alternative offered by Roebrooks and Gamble uses human ambulatory perception of the landscape as the starting point for studying the interplay between humans and the environment. This approach, which sees patterning in settlements in terms of paths linking sites and 'affordances' (more than just resources), is still new and under development. The contributors to this volume would probably not have been aware of this challenging alternative and the papers should be read in the context of research agendas in 1999. Perhaps Commission 27 should convene a meeting again in five years' time and consider the impact of the path model, but in the interim we have a familiar methodology to work with.

Contributing authors follow no clearly defined agenda. Most papers fall into one of two approaches to settlement analysis: they are either single site based or intersite (eg, valley or region) in perspective. Some of the French contributions perhaps unsurprisingly emphasise lithic *chaînes opératoires.* The analysis of intrasite spatial patterning is used to devise and support typologies of site function on which wider regional dynamics can be modelled, assuming intersite contemporaneity. This focus on single sites is used by Van Peer (**3**), Clark (**5**), Richter (**10**), Otte et al (**13**), Swinnen (**15**), Depaepe (**16**), Locht (**17**), Meignan et al (**21**), and Vaquero et al (**26**). The remaining chapters start with a topographical or regional perspective from which to view land-use behaviour in relation to changing resources. The exception to this dichotomy is Mussi's (**23**) analysis of the likely competition between humans and carnivores for access to caves in the context of the Italian record and Neanderthal settlement behaviour.

Africa

The Middle Stone Age (MSA) horizon at the open-air site of Florisbad, South Africa, is the most intensively investigated site of its kind in southern Africa. Caves dominate the archaeological record of the region which makes the research here of particular importance. The use of the landscape by early modern humans is still poorly known and the exceptional conditions of preservation allow for detailed intrasite analyses of short-lived events. Brink and Henderson (**1**) present interim results of ongoing extensive horizontal excavations of the Last Interglacial land-surface at Florisbad, and at two newly discovered sites in the adjacent Modder valley. The pattern of prey selection by humans differs between the localities, with the occupants of the Florisbad spring site selecting a narrower range of animals (medium-sized antelopes) compared to the occupants of the riverside sites who processed a wider range of animals, including large antelopes. These preliminary observations point to unexpected behavioural variability linked to differing features of the landscape. The one note of uncertainty in this preliminary report is the need to demonstrate the contemporaneity of the Modder river sites with the MSA horizon at Florisbad.

The east African record is represented by Ambrose's (**2**) overview from the central rift valley of Kenya. The relative poverty of the database underlies this speculative study which integrates archaeological, ethnographic and geomorphological data into a testable model of MSA settlement behaviour. The modern ecotone between montane forest and grassland savanna provides sufficient resources for contemporary hunter-gatherers to live in semi-sedentary settlements. Soil carbon isotope data shows that the altitude of this ecotone shifted upwards and resource diversity decreased during dry phases in the Holocene. Ambrose constructs a model in which MSA hunter-gatherers opted for greater mobility and use of alliance networks in response to climate change during dry glacial stages (OIS4, 6). The test implications are specified clearly in terms of site size, location and diversity of lithic resources used. Only mentioned in passing, but of wider interest is the observation that lithic reduction strategies and percentages of retouched tools do not differ with increasing distance from raw material sources. This is in stark contrast to patterns reported in Nubia (**3**), the Maghreb (**4**) and in the European chapters.

Clark (**5**) offers a personal reflection on the likely function of the many caves and rockshelters he

experienced in his long career working in wide variety of African landscapes. This overview is not chronological but highlights instead the salient features of each site in relation to specific topographical features or access to resources. He concludes with a challenge to all Africanists that to maximise the potential behavioural content of cave deposits we should turn to examples of best practice in Europe. Much of the content of this volume will serve that purpose, but it is all too easy to forget the logistical, financial and other constraints that affect research in many areas of Africa. Again, inter-continental collaborations are to be encouraged.

Asia

The limited coverage of the Asian database has already been discussed, but a strength of this section is the inclusion of two reports of extensive research programmes in the Near East. The availability of water in the central Syrian desert exerted a tethering effect on settlement patterns throughout the Palaeolithic of the region. Le Tensorer et al (**6**) take this basic need for water as a starting point for their analysis of changing patterns of land-use in the El Kowm basin. After outlining the biases in site preservation and limitations of dating and palaeoecological frameworks, the authors present convincing evidence for a shift in settlement strategy from the early to later Middle Palaeolithic. The later occupants of the basin used more of the landscape and exploited flint resources located away from immediate water sources. The behavioural implications of this apparent expansion of activities are not developed, which is a shame. A concluding section is needed to draw together the wealth of data that has been generated by this project since its inception in 1980.

Qafzeh cave is well-known to Africanists and Europeanists alike for its role in current debates about the evolution of early modern humans in the Near East. Hovers (**7**) uses the site as a case study for analysing trends in typological and technological change in the Levantine Middle Palaeolithic. A detailed analysis of lithic reduction patterns is offered in lieu of settlement pattern studies which Hovers argues are "futile" given the poor chronological resolution of the archaeological record. Deeply stratified sites like Qafzeh and Tabun offer long records of changing trends of tool making and typology which may reflect wider demographic trends. To simplify a complex argument, an increase in lithic (and faunal) debris density and range of tool types over a given time period indicates a shift towards more intensive use of smaller territories and repeated use of specific sites. At Qafzeh and at other long sequence sites in the region, there is a trend toward more frequent occupation and increasing lithic variability after 120 ka. Hovers argues that this trend applies equally to Neanderthals and early moderns - they are indistinguishable in their use of the landscape. A corresponding increase in burials occurs which may be evidence of territorial marking and an indicator of strong social ties to specific sites.

The strength of Hovers argument lies in the explicit links made between lithic reduction systems, settlement dynamics and socially embedded decision making. This model has wider utility for archaeologists working in contexts where chronological controls are poor, which will be most everywhere in Africa if not for much of Eurasia. One note of caution, the formation of the Qafzeh terrace deposits is not discussed here. Processes such as compaction of sediments should be considered when making comparisons of artefact densities within and between sites.

Europe

The European papers are largely biased chronologically towards the substages of OIS5: few papers deal with OIS4 or 3, exceptions being Boyle (**24**) on Mediterranean southeast France, Tillet (**19**) on the circumalpine region, Zilhão (**27**) on Portugal and one or two other single sites covered in other papers. Only Peresani (**22**) includes OIS6 in any detail. What is evident is that archaeological visibility is clearer from OIS5 and issues as to the importance and nature of hunting are either unclear

or debatable before then, eg, in the Rhineland where the full scale of lithic variability may not have yet been recognised. From this time it is clear that in most regions occupation was never continual. For example, in northwest France sites appear to relate to the early parts of stadials within OIS4 as noted by Tuffreau (**14**) and the Maas basin and adjacent areas was also abandoned in full stadials as noted by Rolland (**25**).

Technologically, the ubiquity of various Levallois strategies in the substages of OIS5 and later, their interdigitation with discoidal and 'Quina' methods in OIS4 and 3, eg, at Fumane cave, Italy (**22**), the prevalence of Quina methods in the stadial conditions of OIS4, eg, in the Aquitaine and Maas Basins (**25**), and the interdigitation of bifacial 'Micoquian' and traditional 'Mousterian' elements will be of no surprise to Europeanists. The clear dominance of Levallois flakes and (especially) blades and points over formally retouched tools is seen at northwest and north Central French sites as observed by Depaepe (**16**), Tuffreau (**14**) and Swinnen (**15**) and in the circumalpine regions as noted by Tillet (**19**).

Many European sites covered in the volume fall into clear 'regional' associations of open and cave/rockshelter sites which, despite chronological imprecision are probably fairly interpreted as reflecting some territorial/exploitational reality. Some sites, however, remain isolated, such as the Canalettes rockshelter in the French Grands Causses as noted by Meignen & Brugal (**21**). Marks and Chabai (**9**) discuss the stability over long periods of time in the exploitation of flint sources in Crimea, and suggest that this is indicative of the use of traditional quarries. Here, sites tend to cluster around two main raw material sources suggesting clearly the importance of the lithic domain in site location. The overall nature of Crimean site types suggest to Marks and Chabai high degrees of mobility in restricted area, occurring in all probability in a predictable manner. Similarly, Richter (**10**) discusses two major southern German open air sites, Wittlingen on the Swabian Alb and Speckberg on the Franconian Alb, which are located atop preferred chert sources and may be interpreted as reflecting Micoquian/Mousterian exploitation of traditional sources. Whilst Jurassic chert was clearly the preferred material for reduction, the presence of a range of other raw materials on these sites suggests the exploitation of many other materials in the vicinity of the sites, presumably in the context of intensive mobility within foraging ranges. Different knapping strategies were employed for such non-local materials. Most of the European materials relate to the usual Middle Palaeolithic procurement strategies of obtaining most materials within a few kilometres of the site, some materials within the 20 - 30 km range and the occasional importation of exotic materials from a distance of up to c 100 km. For example, wider ranging activities have been identified by Otte et al (**13**) through non-local materials such as pthanite (40 km) and Campanian flint (80 km) at Skladina, which were clearly introduced to supplement poor quality materials available locally.

The intensity of site occupation or revisitation varies considerably among the European sites. Rolland draws attention to the thick sedimentary contexts, rich lithic and faunal assemblages and numerous hearths of Quina Mousterian sites in the Aquitaine Basin as indicative of intense use of caves and rockshelters in the region albeit on a seasonal basis. By contrast, Conard (**11**) notes that no long term base camps have yet been recognised in the Rhineland volcano tops, although this is perhaps not surprising given their location and the c 100 m uphill climb to reach them. By contrast the Canalettes rockshelter in the French Causse saw long seasonal stays that Meignen & Brugal (**21**) estimate as varying between one and six months' duration.

Apart from raw material sources, sites are also located preferentially along rivers or in small dry valleys, eg, in northwest France (**14**, **15**, **17**). The tactical use of small box canyons can often be observed, eg, at Starosele for the hunting of small groups of horse (**9**), in addition to steep gorges which presumably channelled game in the French Causse (**24**) and the Maas Basin (**25**). Sites on the Rhineland volcano tops are situated 100 m above the plains and possess commanding views of the

landscape (**11**). Clearly the 360° vantage was important here. Beauvais in northwest France possessed a commanding view of both a valley to the south and a plateau to the north (**17**), again a relatively large viewshed. Irrespective of location, the provisioning of place with lithic materials was common in European settlement systems, even when it required considerable transport costs such as up the sides of the Rhineland volcanoes. In addition, possible caching of antlers and scoria in craters may have been practised in the Rhineland.

As Vermeersch (**18**) notes, most open sites appear to have been the focus of repeated short-term use, relating to the obvious factors of accessibility, optimal positioning and proximity to raw materials and water. Sites are often most abundant in ecotonal areas, eg, of Crimea (**9**). Multiple short-term use of caves has been observed by Çep & Waiblinger (**12**) for caves and open sites around the Swabian and Franconian Alb, and by Otte et al (**13**) at Scladina, Belgium, where the human element is relatively modest, much of the occupation apparently relating to bear denning. By contrast, the repetitive occupation of the Canalettes rockshelter suggests to Meignen & Brugal that the site played a specific role for millennia. The repeated spatial structure of sites is emphasised by Zilhão (**27**) for Portugal, and for the Abric Romani by Vaquero et al (**26**) who take this to potentially reflect a stable social structure of the Neanderthal inhabitants.

The location of some sites at high altitude, notably in southeastern/Mediterranean France (**24**) and the circumalpine area (**19**, **20**, **24**, **22**, **23**) is of interest. In the Alps and Jura sites range from 200 to 2100 m above sea level, indicating a level of frequent vertical migration in the piedmont between lower sites <1000 m to the mountains >1500 m, and in Mediterranean France they range from near coastal sites 30 m below sea level to above 1000 m. This, however, is not a rule for mountainous areas; Zilhão (**27**) notes that occupation sites in the mountainous zone of Portugal are unknown.

A number of the European papers examine for intrasite spatial patterning which may either relate to deliberate structuring of space or to the latent structures of discard behaviour. Vermeersch (**18**) draws attention to the importance of understanding intrasite spatial patterning, both in terms of patterned discard of lithics and fauna and of possible 'dwellings'. His attempt to identify such phenomena across western Europe results in largely negative conclusions, either because there is no evident structured use of space beyond activity areas, because vertical displacement of archaeological palimpsests is considerable, or because relevant data has simply not been published. Conard finds little evidence of spatial organisation beyond knapping 'hotspots' among the Rhineland volcano top sites, which are in terms of latent spatial patterning similar to the three activity 'zones' at Bettencourt-Saint-Ouen, northwest France discussed by Swinnen (**15**). Otte et al (**13**) believe it is extremely difficult to see any evidence of structured use of space at Sclayn beyond separate tool manufacture events. Similarly, both Tuffreau and Locht (**14**, **17**) point to the rarity of tangible structures in debitage systems in northwest France and lack of spatial patterning beyond zones of lithic deposition such as the movement of some lithic tools between 'poles' of activity at Beauvais. Large stones were transported to Rhineland volcano top sites (**11**), but it is unclear whether these were used to weigh down skins or possibly to smash bones open for marrow, a practice that was certainly occurring at Wallertheim. At Molinons "Le Grand Chanteloup" to the south of Paris, Depaepe (**16**) notes the spatial segregation of Levallois flakes and blades in areas of high tool density in the eastern part of the site, and bifaces and backed knives in the western, suggesting both spatial segregation of activities and discrete, complementary functions for these two broad tool groups in zones which displayed no inter-zone refitting. Beyond this though, lithic material was homogeneous and he could observe no further differences between these two zones. At the rich multi-layered site of the Abric Romani, Spain, Vaquero et al (26) note that most levels do not show organisational criteria which affect the entire site area, although they do show zones of discrete lithic accumulation sorted mainly

by size which are to some extent defined by site topography, and largely in our opinion by Binfordian drop and toss activity. Here, as with many European sites, hearths form foci for activities, in this case knapping and those resulting in the accumulation of small bones.

Certainly most authors state or imply that European faunal resources were procured by hunting. Boyle uses Stiner's coefficient of anatomical content to demonstrate that Mediterranean French Neanderthals were perhaps even 'obligate' hunters approximating wolf-like dietary strategies. Many sites concerned exhibited mixed faunal assemblages characteristic of opportunistic hunting, eg, the 'mammoth-steppe' elements at Sclayn (**13**) and in the circumalpine region (**19**) and the generalised large mammal faunas of northwest French sites (**14**) which are often of similar character such as the OIS4 deposits at Beauvais (**17**). The clear importance of specialised taxa procurement is obvious from the substages of OIS5, eg, of *Equus hydruntinus* in Crimea (**9**), and Horse at Sesselfelsgrotte in Bavaria (**10**). Fat acquisition clearly played an expected role in European subsistence strategies: marrow was an important resource at the Canalettes rockshelter (**21**), in the German Rhineland (**11**) and Crimea (**9**). Marmot was clearly an important resource in the Alps and Jura, providing a 'greasy' meat that dominates over chamois, ibex and cervids (**19**) that Tillet interprets as a seasonally specific altitude hunting activity. Selective hunting can also be seen in the concentration on prime adult bison at Wallertheim, woolly rhinoceros at Wannen IV, and horse at Wannen V (**11**). The Canalettes rockshelter, despite its isolated location in a relatively inhospitable altitude probably owes its existence to the ecotonal conditions of the immediate surroundings which offered a variety of resources from the high plateaux and deep gorges of the Causse. Similarly mixed topographic ecosystems are found in the north Italian region (**22**). Mussi (**23**), comparing the settlement of northeastern and west central Italy, notes the success of Neanderthals in regions with a high biodiversity capable of supporting a relatively rich carnivore fauna.

The importance of skins, furs and fire to European settlement is demonstrated in a number of papers. The ubiquity of hearths is clear, eg, in western Crimean sites, the Armorican Massif sites, all levels of the Abric Romani, Spain where in Level Ja there are over 50 and in other levels extensive combustion zones, Portuguese sites from OIS4 and 3 which seem also to have been lined with small pebbles and protected/banked with large blocks, and on the Rhineland volcano sites where they form a focus for faunal scatters. Cutmarks on a wolf phalange from Sclayn are indicative of pelt removal; the procurement of bear skins seems to be indicated by similar marks on numerous bones of *Ursus arctos* at Biache-Saint-Vaast, as is the skinning of beaver at San Bernardino cave in northeastern Italy. It is tempting in this light to interpret Tillet's observation that high mountain sites of the Alps and Jura are shared with cave bear as reflecting seasonal pelt procurement strategies, which could be embedded with the procurement of fatty meats such as that of marmot and high altitude high quality flints which were transported over significant distances. At other times, bears and the other large carnivore of Upper Pleistocene Europe, the lion, may well have been deliberately avoided as suggested by Mussi.

Some indications of small game and vegetal resources exist in the more recently excavated European sites. Microwear traces indicate the removal of feathers at Starosele. Microliths were apparently used for plant processing at Sesselfelsgrotte. Fish and birds, the latter from various environments were recovered from northeastern Italian faunas. Marine resources, potentially including seal were also being exploited in late Mousterian occupations at the Gruta da Figueira Brava, and possibly tortoise and rabbit at the Gruta da Oliveira, Portugal. Plant macrofossil data from Canalettes, Esquicho-Grapaou and Hortus suggest that hazel, walnut and olives were some of the vegetal supplements to meat, in addition to possible fish drying.

Quality and value

This on the whole is a well produced volume, but there are small inconsistencies in the quality of the images with some suffering from broken lines and lettering or uneven reproduction of tonal shading. These are minor flaws. We would like to have seen more photographs included given that site location and viewsheds are important elements for modelling human perception and use of landscapes. Again, this is a quibble that is perhaps more relevant to a future publication that integrates the path model. Besides, additional photographs would have increased the cost of what is an affordable book - another of its strengths.

[1] Numbers in parentheses refer to the numbering of contributions in *Settlement Dynamics*

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